Indexes of missile systems of the Strategic Missile Forces

DATA AS OF 2021 (standard update)
Indices of the Strategic Missile Forces missile systems
★★★

Indices of the Strategic Missile Forces missile systems with solid-fuel missiles as of 2021:

Official name / industrial name	Type	Western designation	Complex	SPU / APU / SHPU	Rocket	Name of the SNF	Note
"Barguzin"	BZHRK				15Ж83 (source , source)		
"Perimeter-RC" / "Sirena"	PGRK		15P175		15U75 / 15Zh75 (source)		command missile based on the Topol PGRK and 15Zh58 missiles
RS-26 "Rubezh"	PGRK	KY-26 / SS-X-31		15U194 (?)	15Ж67 (source)		2015 MZKT-79291 (?) undergoes testing
RS-24 "Yars-M"	OS		15P165M1 (source)	15P765M1 (?)	15Ж65M / 15Ж65M1 / 15Ж80 (source)		MIT 2012 (15Zh65M1) 2016 (15Zh80)
RS-24 "Yars"	OS	SS-29 SS-27 mod.3 SICKLE-C / STALIN	15P165M	15P765M	15W65M	RS-12M2R	MIT
RS-24 "Yars-M" (?)	PGRK		15P155M1 (source)	15U175M1	15Ж55M1 (?)		MIT, 2012
RS-24 "Yars" / "Topol-MR"	PGRK	SS-29 SS-27 mod.2 SICKLE-B / STALIN	15P155M	15U175M	15W55M	RS-12M2R	MIT, MZKT-79221
"Speed"	PGRK		15P666		15Ж66	RSS-40	MIT
"Albatross"	OS		15P170	15P770 ?	15Ж70?		NPO Mechanical Engineering
RT-2PM1 "Topol-M"	PGRK	SS-27 SICKLE-B / STALIN	15P155	15U175	15Ж55	RS-12M1	MIT
RT-2PM2 "Topol-M"	OS	SS-27 SICKLE-B | STALIN	15P065 15P165	15P765, 15P765-18, 15P765-18M, 15P765-18E, 15P765-30, 15P765-30P, 15P765-35	15Ж65	RS-12M2	initially - Yuzhnoye Design Bureau, development of the 1st stage solid propellant rocket engine 15D365 was launched by the Design Bureau in 1988.
"Virgin Land"	PGRK		15P962	15P162, 15P662	15Ж62		MIT (source), was developed in parallel with the 15Zh61Kb "Yuzhnoye" missile, development was stopped because it became clear that such a complex would not be able to provide the necessary characteristics for combat effectiveness (source)
RT-23UTTH "Molodets"	BZHRK	SS-24 SCALPEL mod.3	15P761	15P961	15Ж61	RS-22A	Yuzhnoye Design Bureau, the decision to create an ICBM with improved characteristics was made in 1983, 1st and 2nd stage solid propellant rocket engines 15D305 and 15D339
RT-23UTTH	OS	SS-24 SCALPEL mod.2	15P060, 15P160	15P760, 15P960	15Ж60	RS-22B	Yuzhnoye Design Bureau, the decision to create an ICBM with improved characteristics was made in 1983, 1st and 2nd stage solid propellant rocket engines 15D305 and 15D339
RSS-40 "Courier"	PGRK	SS-X-26	15P159	15U160 15U160M	15Ж59	RSS-40	MIT, MAZ-7909 MAZ-7929
RT-2PM "Topol"	PGRK	SS-25 SICKLE	15P158	15U168	15Ж58	RS-12M	MIT, MAZ-7917
RT-2PM "Topol"	PGRK	SS-25 SICKLE	15P158.1 / 15P658	15U128.1	15Ж58	RS-12M	MIT, MAZ-7912
"Pioneer 3"	PGRK	SS-20 SABER mod.3 SS-X-28 SABER	15P157	15U167	15Ж57		MIT, MAZ-7916
"Horn"	PGRK		15P656		15Ж56		MIT, command rocket
"Universal" / "Topol-M" RT-2PM1 (source)	PGRK	SS-27 SICKLE-B	15P155	15U175	15Ж55	RS-12M1	MIT, chassis PGRK MZKT-79221
"Pioneer-UTTH" / "Pioneer-2"	PGRK	SS-20 SABER mod.2	15P653	15U136	15Zh54 (GC) 15Zh53 (RGCh)		MAZ-547V
RT-23 "Molodets"	BZHRK	SS-24 SCALPEL	15P952	SM-SP-35	15Ж52	RS-22	KB Yuzhnoye, solid propellant rocket motors of the first stage – 15D206 and the second stage – 15D207
					15Ж51		command missile, possibly RT-2PK (?)
"Temp-2SM2"	PGRK		15P648		15Ж48	RS-14	
"Temp-2SM1"	PGRK		15P647		15Ж47	RS-14	

RT-21M "Pioneer-K" / "Pioneer-M"	PGRK	SS-20 SABER mod.1	15P645K		15Ж46	RSD-10	MAZ-547A
RT-21M "Pioneer"	PGRK	SS-20 SABER mod.1	15P645	15U106	15Ж45 (MIG)	RSD-10	MAZ-547A
RT-23	OS				15Ж44		KB Yuzhnoye, solid propellant rocket motors of the first stage – 15D206 and the second stage – 15D207
RT-22	BZHRK			SM-SP-35	15Ж43		Yuzhnoye Design Bureau, development started in 1969, 1st stage engine 15D122
"Temp-2S"	PGRK	SS-X-16 / SS-16 SINNER	15P642	15U67	15Ж42	RS-14	MAZ-547A
RT-21	OS			SM-SP-27	15Ж41		KB "Yuzhnoye"
RT-2P	OS	SS-13 mod.2 SAVAGE	15P098P	15P798 / OS-98	8K98P	RS-12	OKB-1 / Central Design Bureau "Arsenal"
RT-2	OS	SS-13 mod.2 SAVAGE	15P098	15P798 / OS-98	8K98	RS-12	OKB-1 / Central Design Bureau "Arsenal"

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Author: DIMMI Created: 01.08.2015 07:40:28 Comments: 8 READ THE FULL ARTICLE

Complex 9K714 Oka, missile 9M714 - SS-23 SPIDER

DATA FOR 2022 (standard update)
9K714 "Oka" complex, 9M714 / OTR-23 - SS-23 SPIDER-A missile
Complex 9K714U "Oka-U", missile 9M714U - SS-23 SPIDER-B / KY-19
R-400 - export name

Operational-tactical missile system of the army level. In 1972, due to the workload of the Moscow Institute of Thermal Engineering (MIT) on the creation of the mobile ICBM " Temp-2S ", at the suggestion of the Minister of Defense Industry of the USSR S.A. Zverev, the preliminary design of the OTR " Uran " was transferred to the Design Bureau of Mechanical Engineering (Kolomna) and, according to the Resolution of the Council of Ministers of the USSR No. 169-57 of March 19, 1973, work on the creation of the OTR "Oka" began on its basis there. The Design Bureau of Mechanical Engineering (hereinafter - KBM) under the leadership of S.P. Nepobedimy also used the developments of the " Rota " project.

Preparations for testing the 9M714 missile of the Oka complex began at the Kapustin Yar test site in 1975. The launch site was prepared at site 231 of the test site, the assembly and testing building at site 4c was repaired, and a canopy about 15 m high with a protective camouflage coating "Vors" was added to the building to protect against observation by space reconnaissance means. By mid-1977, the test site was ready for testing the complex. On September 27, 1977, the first meeting of the state commission for testing the Oka complex was held. The meeting was held at the Machine-Building Design Bureau in Kolomna. At the meeting, the tasks and responsibilities of each member of the commission were defined, the scope of tests and the procedure for their implementation were announced. In October 1977, the first 9M714 missile and prototypes of the complex's vehicles - the launcher, the TZM, and the preparation vehicle - arrived at the test site. The test program included launches of 31 missiles, service life and transport tests of missiles and ground equipment units, missile tests during rail transportation, tests of the complex for exposure to electromagnetic radiation, tests of the complex in hot-desert and cold climates, etc. During all types of tests, all failures, malfunctions and comments were carefully recorded, and deadlines for eliminating their causes were outlined. In mid-October 1977, the first launch of the 9M714 Oka missile was made. The launch went normally, but with an 8 km overshoot - after a thorough analysis of the control system, TsNIIAG established that the cause of the overshoot was a malfunction in the on-board processor (*source - Zakharov*).

In mid-December 1978, a trainload of equipment and an attached missile division was sent to Transbaikalia to conduct tests on the effects of subzero temperatures. Specialists from the Kapustin Yar test site and industry representatives departed by plane for Chita on January 2, 1979. The tests were conducted in the village of Bezrechnaya, where a motorized rifle regiment was stationed. The main objective of the tests was to study the effects of the lowest temperatures on equipment. A full cycle of planned tests was conducted during January 1979. Overall, the tests were successful; the missile system components showed no failures at temperatures of minus 45 degrees. The State Commission decided to launch the missile. The missile was launched on January 29, 1979, at a temperature of minus 39.5 degrees. The launch was successful (*source: Zakharov*).

The last launch of the Oka complex testing program was conducted in Kapustin Yar in mid-1981. The launch was successful, but at an altitude of 5 km the missile with the nuclear warhead simulator exploded - the cause was a malfunction in the missile engine (*source - Zakharov*).

According to other sources, missile testing at the test site began in 1976, and state testing was conducted in Kapustin Yar in 1977-1980. The first stage of joint testing (September 1977 - August 1979) included testing the missile as a single carrier and testing the missile with a nuclear warhead. The second stage (September 1979 - July 1980) included testing the missile with a cluster warhead. According to various sources, 26 launches were made during the tests (out of the planned 31 launches), and a total of 104 9K714 missiles were launched from the Kapustin Yar test site from 1977 to 1987.

The missiles were mass-produced at the Votkinsk Machine-Building Plant beginning in 1976, and the SPU and support vehicles were produced at the Petropavlovsk Heavy Machine-Building Plant (from 1979 to 1987).

In the structure of the USSR Armed Forces, the complex was supposed to be used as a high-precision combat element of reconnaissance-strike (RUK) and reconnaissance-fire (ROK) complexes. The 9K714 Oka complex was accepted into service in 1980 and began to enter service, partially replacing the 9K72 SCUD-B complexes . The first missile brigade armed with the complex was the 189th Missile Brigade (Stankovo, Belorussian Military District), formed on the basis of the district RBR. In 1981, the complex was discovered by Western reconnaissance assets and identified as SS-23 SPIDER. In December 1987, the complex fell under the restrictions of the INF Treaty and was reduced. Work on the Oka-U modification was stopped in 1987 at the stage of preparation for serial production and adoption into service.

The name "OTR-23" was used in the documentation for the INF Treaty. By default, the data of the base missile is 9M714.

Special thanks to "Pensioner" (http://russianarms.ru) for assistance in preparing materials.

Missile system 9K714 "Oka" - SS-23 SPIDER. SPU 9P71 of the Slovak Army with a missile with a cluster warhead (photo by Myroslav Gyurosi, http://galerie.valka.cz , processed).

Author: DIMMI Created: 30.03.2009 01:02:48 Comments: 116 READ THE FULL ARTICLE

Corona-ICBM / Hwasong-16

DATA FOR 2020 (standard update)
Corona-ICBM / Hwasong-16
★★★

An intercontinental ballistic missile, first shown at the parade in Pyongyang on 10.10.2020. The name "Corona-ICBM" is conditional, the name Hwasong-16 is tentative.

A two-stage ICBM with liquid engines of the 1st and 2nd stages. A new type of transport unit with 11 axles (some of the axles are leading) with spaced cabins - to reduce the height of the payload and accommodate a long missile with an optimal transport altitude. The missile is launched in the same way as in the case of previous DPRK ICBMs from the launch pad. In fact, the self-propelled launcher is a transporter-installer of the missile on the launch pad, similar to the first Soviet mobile IRBMs. The start is hot on the cruise engines of the 1st stage of the missile. It is believed that the first stage of the rocket is an analogue of the first stage of the promising Unha-X launch vehicle.

Presumably, the 1st stage has 4/6 single-chamber liquid-propellant rocket engines similar to the propulsion systems of the GR-1 and R-36 rockets. The steering engines of the 1st and 2nd stages were presumably removed from the rocket samples shown at the parade. Some estimates indicate a rocket diameter of 3 meters, but it seems to me that the diameter of the 1st stage does not exceed 2.7 m, and due to the different heights of the HS-16 and HS-15 rockets on the launchers, experts are mistaken in their estimates. The stage probably has an increased number of liquid-propellant rocket engine chambers from 2 to 4. The warhead separation stage probably ensures the use of MIRV. Although it is too early to give any specific estimates.

Of course, we are shown only mock-ups, not actual missiles. This is a common practice in the recent history of North Korean missile engineering. Of course, this does not rule out the possibility of testing the said missile in the coming months.

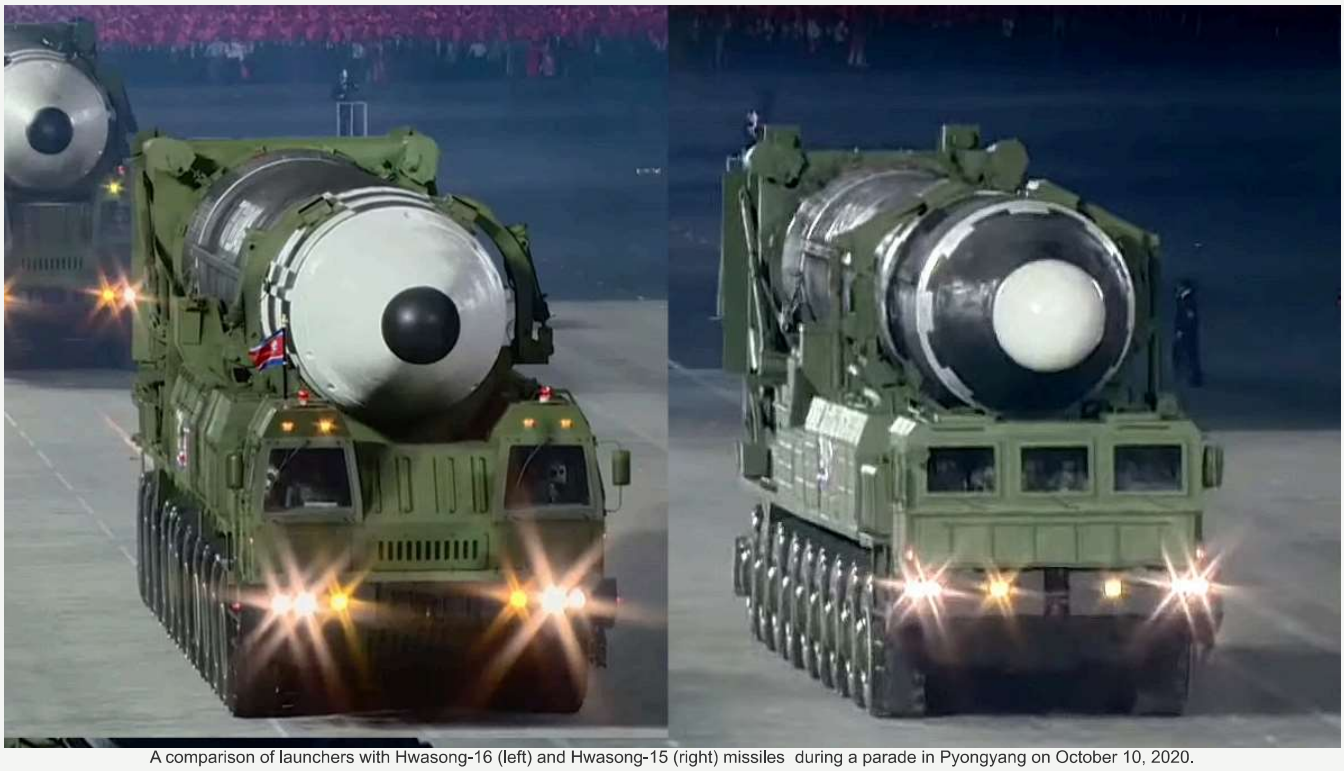
Intercontinental ballistic missile (ICBM), first shown at the parade in Pyongyang 10 October 2020 The name "Corona-ICBM" is conditional, the name Hwasong-16 is probably.

Two-stage ICBM with 1st and 2nd stage liquid engines. A new type of TEL with 11 axles (some of the axles are leading) with spaced cabins - to reduce the height of the payload and accommodate a long rocket with an optimal high in transport position. The missile launched from launch pad like previous DPRK ICBMs. In fact, a TEL is a carrier-launcher for a missile on a launch pad, similar to the first Soviet mobile MRBMs. Hot start on main rocket engines of the 1st stage. It is believed that the first stage of the rocket is an analogue of the first stage of the promising Unha-X launch vehicle.

Presumably, 4/6 single rocket engines are installed at the 1st stage, similar to the propulsion systems of the soviet GR-1 and R-36 missiles. The steering motors of the 1st and 2nd stages were presumably taken from the samples of missiles shown at the parade. Some estimates point to a rocket diameter of 3 meters, but it seems to me that 1st stages diameter is no more than 2.7 meters and increase in the rocket engine chambers from 2 to 4. Because some experts in their estimates of high of TEl with missiles HS-15 and HS-16 had mistakes. Upper stage had the ability to use MIRV warheads. Although it is too early to give some correct estimates.

Of course, we are shown only mock-ups, not real samples of missiles. In recent history of North Korean rocketry, this is a common practice. Of course, this does not negate the likelihood of testing this missile in the coming months.

A Hwasong-16 intercontinental missile is shown during a parade in Pyongyang on October 10, 2020.



A comparison of launchers with Hwasong-16 (left) and Hwasong-15 (right) missiles during a parade in Pyongyang on October 10, 2020.

Author: DIMMI Created: 11.10.2020 11:23:43 Comments: 4 READ THE FULL ARTICLE

Error identifying ICBM RS-28 Sarmat

Error identifying ICBM RS-28 "Sarmat"

A few days ago, sensational information appeared in the new non-native English-language blog Missiles Underground about the discovery of a report by some missile ecologists about the first throw-off launch of the heavy liquid-fueled RS-28 / 15A28 Sarmat ICBM (the article about the missile on our site is temporarily closed at the request of the court). The Missiles Underground blog posted a photo of the burning remains of one of the stages of a certain missile, indicating that these were the consequences of the first throw-off launch of the Sarmat ICBM in December 2017 at the Plesetsk test site and WITHOUT indicating the source of this information. The analysis and search allowed us to find the original source of the photographs - this is the news of the company NPC Ecopromsertefika (link to the news), which really talks about the company's performance of a set of works on environmental support for the throw-off tests of the "128" complex at the Plesetsk cosmodrome in December 2017. But with the

photographs, everything is a little different:

Original photo of the rocket from the news, photo #1 (link to the news)

Author: DIMMI Created: 11.09.2020 09:35:30 Comments: 1 READ THE FULL ARTICLE

9K713 Agat (project)

DATA FOR 2020 (standard update)
Complex "Agat"
Complex 9K713 (?) "Agat-1" - STERLITE (?)

Frontline missile system / extended-range operational-tactical missile system. The system was developed based on the Elbrus system project by the Moscow Institute of Thermal Engineering, chief designer - A.D. Nadiradze. The development of the Agat-1 ground-based ballistic missile system and the Agat air-launched ballistic missile system was carried out by order of the Ministry of Defense Industry and the Ministry of Aviation Industry of July 27, 1978 (source). The land-based version of the system was created as part of a competition to replace the Temp-S extended-range operational-tactical missiles, in which the Volga system project by the Design Bureau of Mechanical Engineering also participated . Work on the Agat system did not leave the design stage.

The NATO name - STERLITE - was assigned by us presumably based on the Globalsecurity.org message (see export).

The GRAU index 9K713 is presumably associated with the Agat complex.

Author: DIMMI Created: 01.10.2009 00:50:29 Comments: 1 READ THE FULL ARTICLE

9K712 Elbrus (project)

DATA AS OF 2020 (standard replenishment)
Complex 9K712 "Elbrus"

Frontline missile system / extended-range operational-tactical missile. Most likely, the development of the missile was started by the Resolution of the Council of Ministers of the USSR No. 959-319 of October 17, 1967. The development of the complex was carried out by the Moscow Institute of Thermal Engineering (MIT) in the early 1970s. The missile was created to replace the Temp-S missile system , taking into account the probable appearance of the SAM-D SAM system (in the future - the Patriot SAM system) in service with NATO countries. Accordingly, the design of the Elbrus missile was supposed to use the missile defense penetration system developed for the Temp-2S strategic complex, as well as other state-of-the-art solutions at that time. A project for a naval version of the Elbrus-M missile was also considered, including in a non-toxic configuration for placement on a Project 1080 carrier ship of the USSR Navy.

Chief designer - A.D. Nadiradze, senior project engineer and head of the Elbrus theme - Yu.S. Solomonov (future director and general designer of MIT). The preliminary design of the complex was released in 1971. The draft design of the complex was defended at the end of 1973. The technical proposal for the development of the missile complex is dated 1974. Work on the Elbrus complex was stopped in 1979 due to MIT being overloaded with work on the creation of strategic missile complexes.

The GRAU index 9K712 is presumably associated with the Elbrus complex.

The autonomous launcher of the Elbrus complex was planned to be placed on the BAZ Osnova chassis. In the photo is the prototype of the BAZ-6944 Osnova chassis, 1979 (source).

Author: DIMMI Created: 29.03.2009 23:56:55 Comments: 7 READ THE FULL ARTICLE

R-26 / 8K66 - SS-8 SASIN (wrong)

DATA AS OF 2020 (standard replenishment)
Missile R-26 / 8K66 - "SS-8 SASIN" (the name is erroneous)
★★★

Intercontinental ballistic missile (ICBM). The missile was developed by OKB-586 (now - Design Bureau "Yuzhnoye", Dnepropetrovsk, General Designer - M.K. Yangel) in accordance with the Resolution of the Council of Ministers of the USSR dated May 23, 1960 on the development of the R-26 missile, which was created to replace the R-16 ICBM. The resolution stipulated that flight design tests would begin as early as December 1961.

The missile was created as a replacement for the R-16 ICBM, but with smaller dimensions and with the ability to keep the missile fueled for up to one year, that is, 12 times longer than the R-16. The missile was originally designed for silo-based deployment. In March 1961, the preliminary design of the rocket was defended. M.I. Galas was appointed as the leading designer of the 8K66 product (until early June 1962), and Yu.A. Andrianov was his assistant.

On May 23, 1961, the USSR Council of Ministers adopted Resolution No. 548-223, specifying the requirements for the missile: the R-26 missile was to be equipped with the same charge as the R-16 and R-9A ICBMs, had to have a range of 11,500-12,000 km with a launch weight of about 85 tons. Silo-based launch was set as the main option, and it was also necessary to develop an unprotected launcher. OKB-586 was determined to be the lead developer, and a cooperation of enterprises that participated in the creation of the R-16 ICBM was involved as co-executors. The design of the combat launch site was entrusted to the Leningrad TsKB-34, which was almost simultaneously working on the silo launch for the R-16. Joint flight tests were planned from the first quarter until the end of 1962.

The reduction in the dimensions of the R-26 missile compared to the R-16 was achieved as follows:
- the energy capabilities of the R-16 (like the R-9A) were somewhat excessive for the combat equipment used, providing a range reserve of at least 1000 km.
- the payload of the missile is determined by the weight of not only the warhead, but also the control system equipment. In this regard, the designers of OKB-586 achieved the inclusion in the government decree of a control figure for the weight of this equipment - 200 kg for the second stage, which corresponded to a lightening of almost 1.5 times compared to the R-16.
- the Decree stipulated a reduction in the mass of the warhead charge by 15% compared to the real sample tested in 1958.

From March to June 1962, NII-229 conducted firing rig tests of both stages of the rocket. During the testing of "hot" stage separation, it was planned to launch the second stage engines with the first stage mock-up attached. Earlier, during the rig tests of the first stage of the R-16 ICBM, the rig was destroyed, and now NII-88 representatives expressed concern that the first stage of the R-26 rocket, which fell during separation, would damage the integrity of the rig tray, and the jet from the second stage engine would destroy the rig. To avoid destruction of the rig, the testers attached an ordinary railroad tie to the body of the first stage mock-up as a kind of shock absorber. After the tests were successfully completed, the railroad tie was packed, sealed by representatives of the Quality Control Department and the Customer, and sent "for examination" to NII-88.

Special thanks to "Praktik" (http://military.tomsk.ru/forum) for assistance in preparing the materials.

R-26 missiles at a parade in Moscow, November 7, 1964.

Author: DIMMI Created: 04.04.2011 12:27:02 Comments: 30 READ THE FULL ARTICLE

RT-20P - SS-X-15 SCROOGE

DATA AS OF 2011 (standard replenishment)
Complex 15P699, missile RT-20P / 8K99 - SS-XZ / SS-X-15 SCROOGE
Complex 15P099, missile RT-20P / 8K99 (silo)

Intercontinental ballistic missile (ICBM) / road-mobile missile system. The complex was developed by OKB-586 (now - Yuzhnoye Design Bureau, Dnepropetrovsk, General Designer - M.K. Yangel), the lead designer of the complex was B.A. Kovtunov (since 1964). By the Resolution of the USSR Council of Ministers No. 316-137 dated April 4, 1961, OKB-586 was offered on a competitive basis with OKB-1 during 1961-1962. Together with related organizations, carry out the relevant R&D work with its subsequent transfer to R&D. The R&D work is based on the technical specifications of the USSR Ministry of Defense for the creation of a small-sized solid-fuel ICBM with a launch weight of 25 tons.

A broad cooperation of design bureaus and enterprises in various areas was involved in the work on the OKB-586 R&D:
- development of high-energy mixed solid propellants, charges and their technology - NII-6, NII-130, GIPH, Plant No. 55 of the Dnepropetrovsk Economic Council;
- development of structural, heat-resistant and heat-shielding materials and technology for the manufacture of solid-propellant rocket motor bodies and units - NII-13, NII-88, VIAM, institutes of the Academy of Sciences of the Ukrainian SSR, NIIGrafit and VNIITS of the Moscow Economic Council, NITI-40, UkrNITI;
- development of on-board and ground control system equipment, electrical equipment, power supplies and cable network - OKB-692, NII-944, VNIIEM, VNIIT, NIAI, OKB-686;
- development of combat equipment - KB-11 of the USSR Ministry of Medium Machine Building;
- comprehensive development of launch options - TsKB-34;
- conducting theoretical and experimental research, developing methods for calculating solid-propellant rocket motors - NII-1, TsAGI, NII-88, NII-6, NII-130, GIPH, MVSSO USSR, MVSSO RSFSR, ISM AS UkrSSR.

Special thanks to "Praktik" (http://military.tomsk.ru/forum) for assistance in preparing the materials.

SPU 15U51 on the "object 821" chassis of the RT-20P ICBM - SS-X-15 SCROOGE at the parade in Moscow, 11/07/1967 (http://militaryphotos.net).

Author: DIMMI Created: 05.04.2011 22:59:25 Comments: 103 READ THE FULL ARTICLE

BZHRK Barguzin (project)

DATA FOR 2017 (standard update)
BZHRK R&D "Barguzin"
★★★

Intercontinental ballistic missile (ICBM) / combat railway missile system (BZHRK). R&D on the creation of the BZHRK was started in 2012 and is being conducted by the Moscow Institute of Thermal Engineering (MIT). Until December 2014, it was discussed that the creation of the complex was possible either on the basis of the RS-24 Yars ICBM or on the basis of the RS-26 Rubezh ICBM or using the developments of the 3M30 Bulava intercontinental SLBM . But in December 2014, information appeared in the media that the complex would include ICBMs of the Yars or Yars-M type (source).

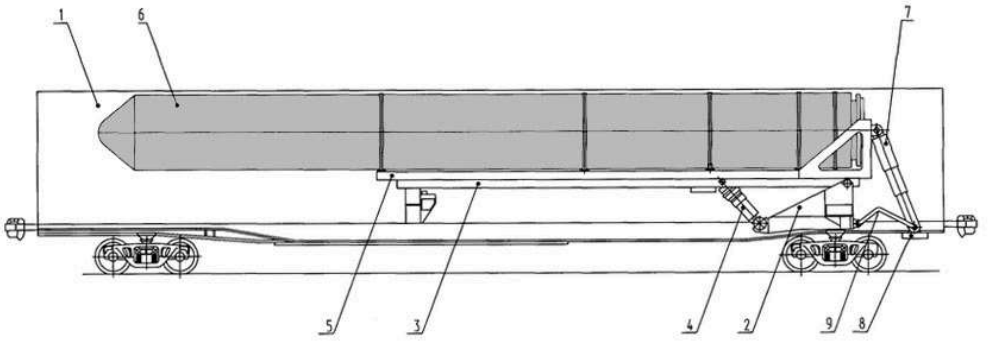
It is unlikely that the chief designer of the complex can be Yu. S. Solomonov , since in his speeches in the media he has repeatedly spoken out against the BZHRK as a class of missile systems. By 2020, it is planned to complete the R&D work, create and test prototypes of the BZhRK (according to plans from 2012). After 2020, the systems will begin to enter service with the Strategic Missile Forces (source).

On April 23, 2013, Deputy Minister of Defense of Russia Yuri Borisov stated that the preliminary design of the BZhRK is currently underway, and work is underway on technical projects (source). On December 18, 2013, the Commander of the Strategic Missile Forces, Colonel General Sergei Karakayev, reported that the preliminary design will be completed in the first half of 2014, but the final decision on the design of the BZhRK has not yet been made (source). As a result, the preliminary design of the system was completed at the end of 2014 (source). The media reported that as of mid-2015, the first stage of R&D work to create the system is underway.

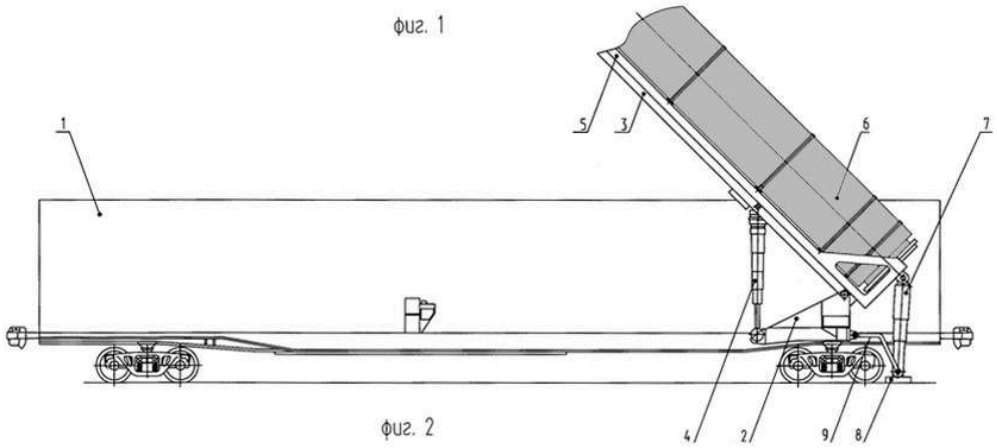
In December 2014, the Deputy Commander-in-Chief of the Strategic Missile Forces stated in the media that the development of the BZhRK could soon begin, and the Commander-in-Chief of the Strategic Missile Forces stated a day later that the new system was called "Barguzin". The development of design documentation began in 2015 and is planned to be completed in mid-2016 (source). However, later in December 2015, a source in the Russian defense industry told the media that due to the difficult financial situation, the work on creating "Barguzin" had been postponed for more than a year and would not be completed before 2020. On May 12, 2016, the media reported that "the design documentation has been developed, individual elements of the system are being created, but there is no exact date for its creation and adoption into service", with clarity on the date set for 2018 (source).

The deployment of the new BZhRK is expected to begin no earlier than 2018, and most likely in 2019 (source). at the end of 2015, the start date of the complex deployment was specified - 2020 (source).

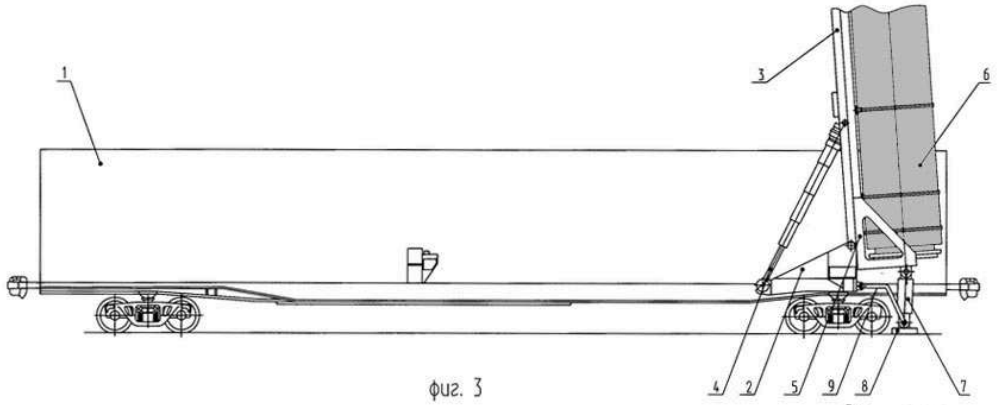
02.12.2017The media reported the closure of the BZhRK creation program (source). Probably for financial reasons, as well as due to inexpediency.



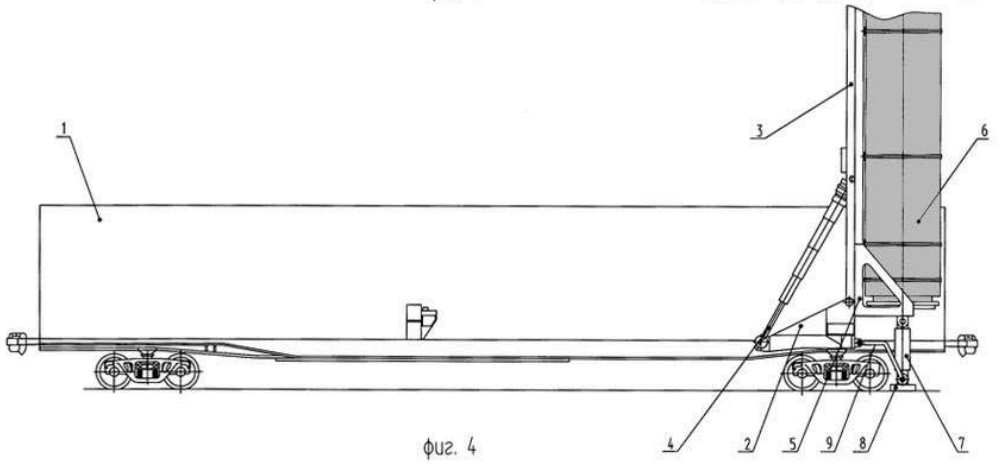
фиг. 1



фиг. 2



фиг. 3



фиг. 4

Illustrations for the patent of the Central Design Bureau "Titan" for a railway launcher (http://militaryrussia.ru via http://www.findpatent.ru).
The numbers on the diagram indicate: 1 - a railway car or platform, 2 - a fixed trunnion beam, 3 - a lifting boom, 4 - a boom lifting mechanism, 5 - a movable frame fixed to the boom with the possibility of longitudinal movement, 6 - a TPK with a missile, 7 - telescopic supports, 8 - support plates, 9 - rotary rods for "aiming" the supports on the rails of the railway bed.

Author: DIMMI Created: 23.04.2013 13:35:08 Comments: 44 READ THE FULL ARTICLE

OKR Avantgarde

DATA FOR 2017 (in progress)
R&D "Avangard" / "Avangard-R"

Development of components for a promising intercontinental ballistic missile (ICBM). The development was carried out by the Moscow Institute of Thermal Engineering (MIT)

jointly with the 4th Central Research Institute of the Russian Ministry of Defense. As of 2011, the development of the R&D "Avangard" (missile complex "Avangard-R" = "Rubezh") was completed and is in the preparation stage for flight tests (source). As of 2015, work on the R&D "Avangard" continues at the 4th Central Research Institute of the Russian Ministry of Defense within the framework of the large complex topic "Shlyambur" (source).

Due to the fact that the results of the development are used in the RS-26 Rubezh missile system , and also due to the name of the component part of the R&D project - Avangard-R - the Avangard R&D project is often associated with the Rubezh complex, and is sometimes called a "missile complex".

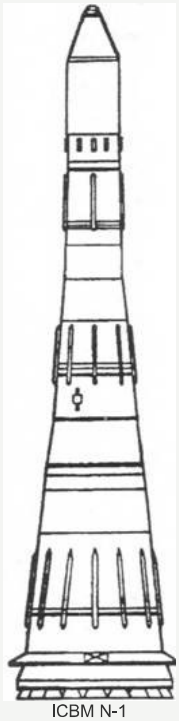
Author: DIMMI Created: 28.01.2017 00:39:08 Comments: 15 READ THE FULL ARTICLE

N-1 / object N (project)

DATA AS OF 2016 (in progress)
Rocket N-1 / "Carrier-1" / object "N" (project)

Project of a super-heavy intercontinental ballistic missile (ICBM). The rocket was developed by OKB-1 (General Designer - S.P. Korolev) in accordance with the Resolution of the USSR Council of Ministers No. 715-296 of June 23, 1960 (submitted for consideration on April 30, 1960) "On the creation of powerful launch vehicles, satellites, spacecraft and the exploration of outer space in 1960-1967". The resolution set the task of developing in 1960-1963 the N-1 launch vehicle with a liquid-propellant rocket engine (object "N"), which could put 40-50 tons of payload into near-Earth orbit and 10-20 tons of payload into interplanetary orbit. The decree provided for the development of a more advanced launch vehicle on its basis in 1963-1967 - the N-II rocket (launching a 60-80 ton payload into low Earth orbit and 20-40 tonnes into an interplanetary trajectory) with nuclear rocket engines on the 2nd and subsequent stages. The decree also tasked the USSR Ministry of Defense to prepare proposals for the military use of space objects and the N-1 launch vehicle in the third quarter of 1960.

According to memoirs, the idea of a super-heavy three-stage N-1 rocket arose in Sergei Pavlovich Korolev in 1956. In various sources, the name is deciphered as "Carrier-1" and as "Science-1". On July 15, 1957, the first proposals for the rocket were presented by Korolev to the Council of Chief Designers. The Resolution of the Council of Ministers of June 23, 1960 (see above) was the first Resolution on the development of the rocket. On May 13, 1961 and April 13, 1962, the second and third Resolutions of the USSR Council of Ministers were issued, which specified the design tasks and deadlines. On September 24, 1962, the USSR Council of Ministers issued a Resolution on the creation of the N-1 launch vehicle for sending an expedition to the Moon (source).



ICBM N-1

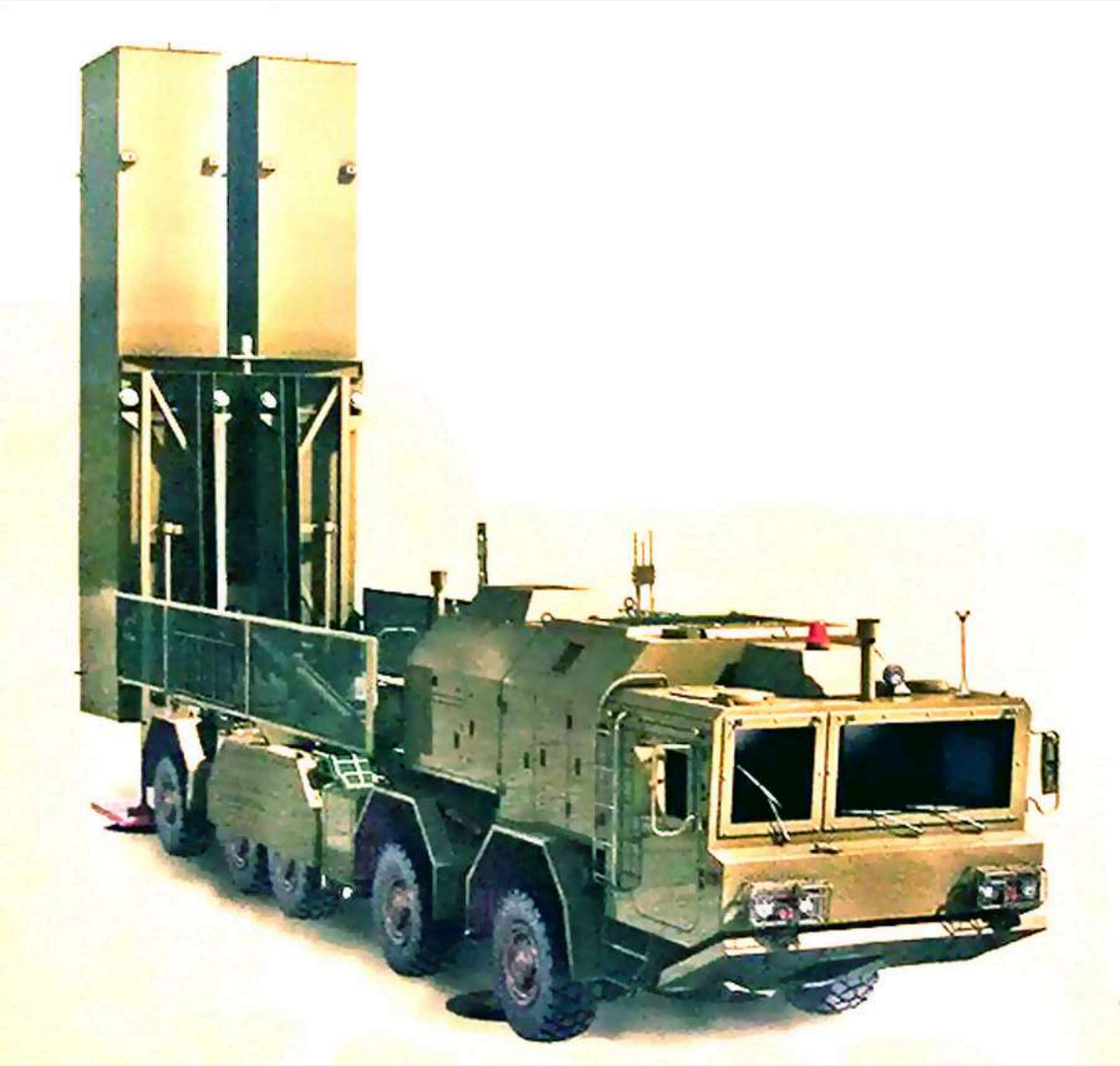
Author: DIMMI Created: 04.05.2015 13:02:59 Comments: 5 READ THE FULL ARTICLE

Grom / Sapsan / Grom-2 (projects, Ukraine)

DATA FOR 2016 (standard update)
Complex "Thunder" (project)
Complex "Sapsan" (project)
Complex "Thunder-2" (project)

Multifunctional missile complex / modular missile system. The national missile complex "Sapsan" has been developed by the Yuzhnoye Design Bureau (Dnepropetrovsk) jointly with the National Space Agency of Ukraine since 2007. The chief designer of the complex as of 2012 is Alexander Pavlovich Kushnarev (source). The decision to create a national operational-tactical complex was made by the Security Council of Ukraine in 1997. When creating the complex, it is likely that the developments of the first national project OTR "Borisfen" (Yuzhnoye Design Bureau, 1994, range up to 500 km, development ceased in 2003) were used. It is also most likely that the project of the OTR "Grom" complex, proposed by the Yuzhnoye Design Bureau for export deliveries in the 1990s, was used in the development of the project.

The technical specifications for the creation of the Sapsan complex were issued by the Ministry of Defense of Ukraine by the end of 2006. According to the initial plans, the development of the Sapsan complex was planned to be completed in 2011, but by 2010, 7 million USD had been spent on the development, after which funding for the project was stopped. According to the media, the 2010-2011 project for the complex involves combining an operational-tactical missile complex and a tactical-range MLRS in a single system and on a single SPU. In addition, in 2007-2009, the media discussed the configuration of the complex with a cruise anti-ship missile and anti-aircraft missiles.



Modern version of the SPU of the Grom-2 missile system, 2016 (UKRSPETSEXPORT brochure, processed).

Author: DIMMI Created: 21.10.2011 16:20:24 Comments: 20 READ THE FULL ARTICLE

15U70 / product 102

DATA AS OF 2016 (in progress)
Product 15U71 / 102 / 102E
★★

Guided warhead of an ICBM. The development of the apparatus under the theme "102" was carried out by "NPO Mashinostroyeniya" (Reutov) jointly with the program for developing guided warheads " Albatross " or in parallel with it.

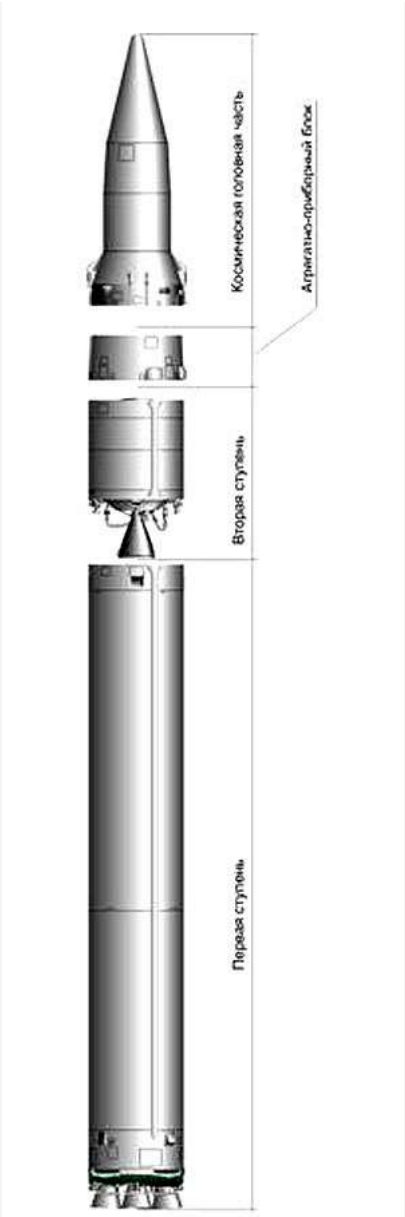
Assembly of prototypes of "product 102-E" as of 2010 is carried out by the pilot production of NPO Mashinostroyeniya (including the non-metal workshop - workshop No. 17, source) and is considered one of the most important tasks at the enterprise (source).

Testing. In order to ensure testing of low-flying targets, by order of the USSR Minister of Defense dated February 20, 1987 and by order of the Commander-in-Chief of the Strategic Missile Forces dated June 20, 1988, the IP-10 measuring point (military unit 21252) in Mirny (Yakutia) was deployed on the basis of the Purga measuring equipment complex. The unit was redeployed to Mirny in June-August 1990 to ensure testing of "product 102" (source). The IP-10 observation point was closed due to the closure of the testing program by directive of the First Deputy Minister of Defense of Russia dated April 4, 1997 (source).

In 2005, the Center for Operation and Testing of Missile Complexes of the Center for Experimental and Testing of the Rocket Complexes of the Republic of Kazakhstan was created as part of the Representative Office of NPO Mashinostroyeniya at the Baikonur Cosmodrome. It was tasked with preparing and launching RS-18 ICBMs on the topics of Zaryadye, 102E, and Kondor (source). As of 2010, the Department of Telemetry Processing of Information of NPO Mashinostroyeniya processes telemetry information obtained during the tests of "product 102" (source).

The name of the apparatus 15U70 and its identification with "product 102" is taken from Western sources .

All data on the complex are presumptive and taken from open sources and the media. The list of sources is attached.

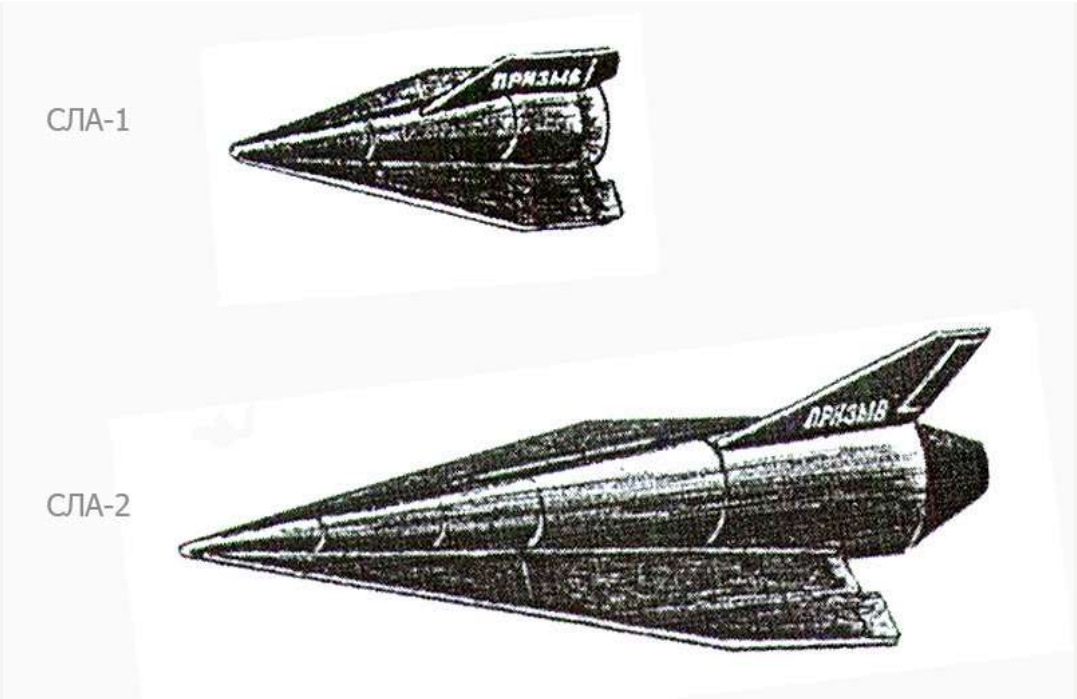


Launch vehicle "Strela" based on ICBM 15A35 / UR-100UNTKH (http://www.npomash.ru/).

Author: DIMMI Created: 09/16/2016 22:42:45 Comments: 5 READ THE FULL ARTICLE

15P170 Albatross

DATA FOR 2015 (standard update)
Research and development work "Albatross", 15P170
Intercontinental ballistic missile (ICBM) complex. The complex was developed by NPO Mashinostroyeniya (Reutovo) in accordance with the Resolution of the USSR Council of Ministers No. 173-45 of February 9, 1987. Chief designer - Gerbert Efremov. In 1991, it was planned to begin testing the complex, and in 1993, it was supposed to begin serial production of the ICBM (source - Kazydub). The creation of a new missile complex with the ability to overcome a multi-echelon missile defense system was to become an asymmetric response to the development of a missile defense system in the United States under the SDI program. The combat equipment of the complex is maneuvering gliding (winged) hypersonic warheads of the first generation (source), capable of maneuvering up to 1000 km in azimuth upon entering the atmosphere at the altitude of the "Karman line" with speeds of about 5.8 - 7.5 km / s (17-22 M). The Albatross project was based on proposals for a controlled warhead capable of performing an evasive maneuver from an interceptor missile - the UBB was supposed to record the launch of the interceptor missile and perform a programmed evasive maneuver. The development of the UBB project with such capabilities was carried out in 1979-1980 - the design of the automation system for such an anti-missile maneuver was carried out (source). The preliminary design of the Albatross complex was developed by the end of 1987 and drew criticism from the Ministry of Defense. The design of the complex was carried out until the beginning of 1989. The main reasons for the termination of development: dubiousness of the project implementation deadlines, incl. due to the problematic nature of the technical solutions incorporated into the project. In June 1989, at a meeting at the NPO Mashinostroeniya (Reutovo), the NPO's general director G.A. Efremov proposed developing the Albatross complex as a universal complex for the Strategic Missile Forces - for silo and mobile basing types. This caused opposition from other ICBM developers - the Moscow Institute of Thermal Engineering (MIT) and the Yuzhnoye Design Bureau (Dnepropetrovsk). On September 9, 1989, in development of the Resolution of the USSR Council of Ministers of February 9, 1987, Decision of the Military-Industrial Commission No. 323 was issued, which prescribed the creation of two new missile systems instead of the Albatross complex - a mobile ground-based and a stationary silo-based based on a three-stage solid-fuel missile, universal for both complexes, developed by MIT for the Topol-2 mobile ground-based complex. The research project was named "Universal" (the RT-2PM2/8Zh65 missile, later - "Topol-M"). The development of the PGRK with the new missile was carried out by MIT, the complex based in the silo - by the Yuzhnoye Design Bureau (history - Kazydub). Active development of the Albatross complex in the interests of the Strategic Missile Forces was stopped after the conclusion of the START-1 Treaty in 1991, but testing of the UBB prototypes continued. ★★★



Drawing of the SLA-1 and SLA-2 aircraft of the Prizyv system from an advertising brochure of NPO Mashinostroeniya, 1990s (http://forums.airbase.ru/).

Author: DIMMI Created: 11.08.2015 07:40:47 Comments: 3 READ THE FULL ARTICLE

2K10 Ladoga / 3M2 missile

DATA FOR 2016 (standard update)
Complex 2K10 "Ladoga", missile 3M2 - 2-stage
Complex 2K10 "Ladoga", missile 3M3 (?) - 1-stage
★★

Front-line guided ballistic missile. The solid-fuel missile with a mobile start was developed by SKB-172 (Perm), chief designer M.Yu. Tsirulnikov.

In the period from 1956 to 1958, SKB-172 carried out the first research and development work on the development of various design options for an operational-tactical missile with a mobile start with various propulsion systems (liquid, solid fuel). For the first time in domestic rocket engineering, the rocket engine body was made of high-strength steel 1 mm thick, but with a winding made of composite materials. Almost all subsequent developments in this area were carried out with the maximum use of composite materials (source).

The development of the Ladoga missile system was initiated by Resolution No. 189-89 of the USSR Council of Ministers dated February 13, 1958, on the development of a "rocket system for ground forces with solid-fuel guided missiles" "Ladoga" and " Onega ". According to the Resolution of the USSR Council of Ministers, the missile was planned to be submitted for test flights in the 3rd quarter of 1960. Initially, the missile was designed as a two-stage missile.

The first stage of flight tests was conducted in 1960 at the Kapustin Yar test site. During the first four launches with a functioning control system, the missile was destroyed before the end of the second stage engine operation. At the end of 1960, it was decided to abandon the two-stage scheme in favor of one stage. An experimental batch of missiles and an experimental launcher were manufactured by the Petropavlovsk Machine-Building Plant on the ZIL-135L chassis. Drop tests of the single-stage version began in April 1961. The first three controlled launches were conducted in July-September 1961 - in all three launches, the missile was destroyed in the active section of the trajectory due to loss of stability and destruction of the engine nozzle. Engine (nozzle) modifications - late 1961. A pilot batch of 12 missiles with a new nozzle were built at Plant No. 172 in early 1962. Tests were conducted in the first half of 1962 - large dispersion was noted, which was probably a consequence of unsatisfactory operation of the control system. Work on the missile was stopped "as an unpromising product" by Resolution of the USSR Council of Ministers No. 231-113 of March 3, 1962.

SPU of the Ladoga complex on the MAZ-535B chassis at the Kapustin Yar proving ground (photo from http://www.russianarms.ru)

Author: DIMMI Created: 28.03.2009 23:27:50 Comments: 7 READ THE FULL ARTICLE

KN-09 (DPRK)

DATA FOR 2016 (standard update)
KN-09
★★★

Tactical missile / guided missile MLRS. Testing of the KN-09 missile type has been underway, apparently, since 2013. Probably, in mid-2014, the missile was accepted into service by the DPRK army after a series of test launches. It is highly likely that both Russian and Chinese technologies and solutions were used in the work on the missile.

Launch of a KN-09 missile from a self-propelled launcher. DPRK, 2015-2016 (source).

Author: DIMMI Created: 10.07.2014 22:48:20 Comments: 9 READ THE FULL ARTICLE

Complex 9K716 Volga (project)

DATA FOR 2016 (standard update)
Complex 9K716 "Volga", missile 9M716 (?)

Front (operational-tactical extended range) missile system. The system was developed using the experience of developing the OTR " Oka " and " Oka-U " by the Design Bureau of Mechanical Engineering (Kolomna) in the first half of the 1980s, chief designer - S.P. Nepobedimy. The system was created as part of a competition to replace the extended-range missiles " Temp-S ". The main competitor in the competition was the " Agat " system developed by the Moscow Institute of Thermal Engineering. A preliminary design for the system was developed (source).

In 1980, the Kapustin Yar test site began preparations for testing the "Volga" missile system with a range of 600 km (probably, such a range was included in the first version of the customer's TTT). Due to the fact that the range turned out to be non-standard for the configuration of the test site, the option of arranging the launch site on site 4A was considered (source - Zakharov).

In 1987, a prototype chassis for the SPU and TZM of the complex was manufactured, chassis testing began, and a prototype TZM was equipped at KBM. Development was stopped in the late 1980s (probably in 1988-1989) at the stage of designing the complex and experimental development of support systems (TZM, etc.) in connection with the conclusion of the INF Treaty.

The Volga complex is in operation (Allocer, http://allocer.nxt.ru , 2010)

Author: DIMMI Created: 26.07.2009 01:55:50 Comments: 102 READ THE FULL ARTICLE

North Korean Medium Range Missiles

DATA FOR 2014 (standard update)

NoDong-A
TaepoDong-1
Musudan / NoDong-B
KN-08 / NoDong-C / Hwasong-13
★★★

General information on the DPRK's medium-range (MRBM) and intermediate-range (IRBM) missiles (from 1,000 to 5,000 km).

NoDong-A missiles on a MAZ-547 chassis launcher during a parade in Pyongyang, April 15, 2012 (http://nkleadershipwatch.wordpress.com).

Author: DIMMI Created: 04.04.2013 22:36:49 Comments: 30 READ THE FULL ARTICLE

KN-08 / NoDong-C / Hwasong-13

DATA FOR 2015 (standard update)
KN-08 / NoDong-C / Hwasong-13
★★★★

Intercontinental ballistic missile. For some time it was considered an intermediate-range ballistic missile (IRBM). Tests of the missile engines at North Korean test sites were noted by Western observers in late 2011. The KN-08 complexes were first publicly shown at a parade in Pyongyang on April 15, 2012. The missiles were equipped with mock-ups of the warheads. In addition, there is an opinion that the missiles themselves were nothing more than mock-ups, since there are doubts about the possibility of moving liquid-propellant missiles on transporters of this size without a container due to the possibility of mechanical deformation of the missile body structure.

At the parade dedicated to the 70th anniversary of the founding of the DPRK on October 10, 2015, another version of the KN-08 missile was shown on the same transporters, which, however, has common features with the 2012 version. There is an assumption that in 2012, "fake" models of missiles were shown, and in 2015, models of real KN-08 missiles were shown.

The name of the complex in the DPRK is HS-13 / Hwasong-13. Decoding the name KN-08 - Korean North, 8th sample.

KN-08 missiles at the parade in Pyongyang on October 10, 2015 (photo - EPA, http://militaryrussia.ru/forum/).

Author: DIMMI Created: 11.10.2015 22:52:39 Comments: 2 READ THE FULL ARTICLE

Ikar complex, R-36M3 / 15A18M2 missile (project)

DATA FOR 2016 (standard update)
Ikar complex, R-36M3 / 15A18M2 missile (project)

A heavy intercontinental ballistic missile of the fifth generation. The preliminary design of the missile and the complex was developed at the Yuzhnoye Design Bureau (Dnepropetrovsk, Ukraine) under the supervision of Academician of the USSR Academy of Sciences V.F. Utkin in 1991. Work on the project was terminated in 1991-1992. Some sources cite the SALT-2 negotiations as the reason for the termination of development, but most likely there were several reasons. One cannot ignore the certain nationalization of the development of ICBMs for the Russian Strategic Missile Forces.

In some literature, the index 15A18M2 is mistakenly attributed to the R-36M2 missile . The index 15A19 is also sometimes mistakenly attributed to the Ikar project.

Author: DIMMI Created: 24.01.2016 10:21:59 Comments: 1 READ THE FULL ARTICLE

1 2 3 **4** 5 6 7